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09/510,300	02/22/2000	Sung-Il Park	8733.20044	2217

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EXAMINER	
DUONG, THOI V	

ART UNIT	PAPER NUMBER
2871	

DATE MAILED: 10/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AFC

Office Action Summary	Application No.	Applicant(s)	
	09/510,300	PARK ET AL.	
	Examiner	Art Unit	
	Thoi V. Duong	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *03* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 July 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6 and 8-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *10-18 and 20* is/are allowed.

6)☒ Claim(s) *1-6,8,9,19 and 21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is in response to the Amendment filed July 19, 2005.

Accordingly, claims 1, 6, 10 15 and 20 were amended, and claim 7 was cancelled. Currently, claims 1-6 and 8-21 are pending in this application.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1 and 3 are rejected under 35 U.S.C. 102(e) as being anticipated by Song (USPN 6,038,002).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in

the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Re claim 1, as shown in Figs. 10-12, Song discloses a liquid crystal display (LCD) having a plurality of pixels, each pixel comprising:

a gate line 61a on a first transparent substrate 60,

a data line 77 arranged to cross the gate line 61a wherein the gate line 61a is insulated from the data line 77,

a gate electrode 61 protruding from said gate line 61a in an area where said data line 77 crosses said gate line 61a,

a thin film transistor having a source electrode 66a connected to the data line 77 and a drain electrode 66b separated from the source electrode 66a,

a passivation layer 67 covering the thin film transistor wherein a contact hole exposing a portion of the drain electrode 66b is formed in the passivation layer 67, and

a pixel electrode 68 formed on the passivation layer 67, the pixel electrode 68 being connected to the drain electrode 66b through the contact hole and partially overlapping the data line 77 (Fig. 11b and col. 6, lines 8-9);

a black matrix 71, a color filter 72, and a common electrode 73 on a second transparent substrate 70, the black matrix 71 partially and asymmetrically overlapping the data line 77 (Fig. 10) since the overlap portion on the data line is not symmetrical; and

liquid crystals 75 provided and sealed between the first and second transparent substrates,

wherein, re claim 3, the passivation layer is an organic passivation layer (col. 6, lines 63-65).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being obvious over Song (USPN 6,038,002) in view of Kobayashi et al. (Kobayashi, USPN 5,847,792).

The applied reference, USPN 6,038,002, has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing

that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Song discloses a liquid crystal display includes all that is recited in claim 2 except for a location of the black matrix which is selected according to a direction of rubbing an alignment film.

As shown in Figs. 19A and 19B, Kobayashi discloses a LCD comprising a black matrix 35, a common electrode 12 and an alignment film on a counter substrate 2, wherein the black matrix is formed in regions on the counter substrate opposed to the regions in which inversely tilted domains are apt to be caused to prevent light leakage (col. 12, lines 50-53 and col. 13, lines 50-59).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the LCD of Song with the teaching of Kobayashi by selecting a location where the black matrix overlaps the data line according to a direction of rubbing an alignment film to prevent leakage current due to photoelectromotive force (col. 13, lines 57-59).

6. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being obvious over Song (USPN 6,038,002) in view of Shimada (Shimada, USPN 5,917,571).

The applied reference, USPN 6,038,002, has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is

thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Song discloses a liquid crystal display that is basically the same as that recited in claims 4 and 5 except for an organic passivation layer made of acryl or BCB.

As shown in Fig. 2, Shimada discloses that an innerlayer insulating film 18 hacing a first layer containing organic insulating material such as acryl or BCB so as to realize a liquid crystal display device having a high aperture ratio and to inexpensively obtain a satisfactory liquid crystal alignment (col. 10, lines 34-57).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the LCD of Song with the teaching of Shimada by forming the organic passivation layer of acryl or BCB to realize a liquid crystal display device having a high aperture ratio and to inexpensively obtain a satisfactory liquid crystal alignment (col. 10, lines 53-57).

7. Claim 21 is rejected under 35 U.S.C. 103(a) as being obvious over Song (USPN 6,038,002) in view of Koike et al. (Koike, USPN 5,781,253).

The applied reference, USPN 6,038,002, has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Song discloses a liquid crystal display that is basically the same as that recited in claim 21 except for a portion of the black matrix that partially overlaps the data line having width of about at least 2 micrometer.

However, it is obvious that the overlap portion between the black matrix and the data line is more than 2 micrometer since the overlap portion equals to the width of the data line where the width of the data line is 10 to 50 micrometer as disclosed by Koike (col. 1, lines 53-61).

8. Claims 6, 8, 9 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jung (USPN 6,300,987 B1) in view of Yoshino (USPN 5,358,810) and Shimada et al. (Shimada, USPN 5,877,830).

Re claim 6, as shown in Figs. 6 and 7, Jung discloses a liquid crystal display (LCD) comprising:

a thin film transistor plate further comprising:

a gate line 210 on a first transparent substrate 100;

a first data line 310 (on left of Fig. 7) arranged to cross the gate line 210 wherein the gate line is insulated from the data line;

a gate electrode 110 protruding from said gate line in an area where said data line crosses said gate line;

a thin film transistor 410 having a source electrode 313 connected to the first data line and a drain electrode 312 separated from the source electrode;

a passivation layer 350 covering the thin film transistor wherein a contact hole exposing a portion of the drain electrode 312 is formed in the passivation layer 350; and

a pixel electrode 510 on the passivation layer and being connected to the drain electrode 312 through the contact hole, wherein the pixel electrode 510 partially overlaps the first data line 310 at a first end of the pixel electrode 510 by a width of W1 (Applicant's a width of "b"),

wherein the pixel electrode 510 partially overlaps a second data line 310 at a second end of the pixel electrode (on right of Fig. 7) opposite to the first end by a width

of W3 (Applicant's a width of "a"), and wherein "a" and "b" are not equal (col. 5, lines 31-50).

Re claim 8, Jung discloses that an overlap width between the pixel electrode 510 and the first data line 310 is selected according to a direction R of rubbing an alignment film as shown in Fig. 7 (col. 3, lines 31-50).

Re claim 9, the passivation layer 350 is an organic passivation layer)col. 4, lines 64-67).

Re claim 19, Jung discloses that a first overlap width W1 between the first data line and the pixel electrode is larger than a second overlap width W3 between the pixel electrode and the second data line (col. 5, lines 31-40).

Jung discloses a LCD that is basically the same as that recited in claim 6 except for a second transparent substrate comprising a color filter plate including a black matrix, a color filter and a common electrode.

As shown in Figs. 2 and 3E, Yoshino discloses a liquid crystal display comprising a thin film transistor substrate 4 and a color filter plate 2 comprising a color filter 36, a black matrix 24 and a common electrode 12 (col. 3, lines 33-42 and col. 4, lines 22-24), wherein liquid crystals is provided and sealed between between the thin film transistor substrate 4 and the color filter plate 2 (col. 5, line 66 through col. 6, line 4).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the LCD of den Boer with the teachings of Yoshino by forming a second transparent substrate comprising a color filter plate

including a black matrix, a color filter and a common electrode so as to realize a color display having a sufficient light-shielding effect (col. 2, lines 25-29 and 43-46).

The LCD of Jung as modified in view of Yoshino above includes all that is recited in claim 6 except for an overlap width between the pixel electrode and the first data line being between 2 micrometer and 4 micrometer, and an overlap width between the pixel electrode and the second data line is less than 2 micrometer.

As shown in Fig. 4, Shimada discloses that the overlap width of the pixel electrode 11 and the data line 8 is about 1 micrometer or more to perform a display without crosstalk (col. 9, lines 58-67). Accordingly, it is obvious that with the teaching of Shimada, an overlap width W1 between the pixel electrode and the second data line of Jung can be formed about 1 micrometer and an overlap width W3 between the pixel electrode and the first data line of Jung can be 2 micrometer or more since W1 is wider than W3.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the LCD of Jung with the teaching of Shimada by forming an overlap width between the pixel electrode and the first data line being between 2 micrometer and 4 micrometer, and an overlap width between the pixel electrode and the second data line is less than 2 micrometer so as to perform a display without crosstalk (col. 9, lines 58-64).

Allowable Subject Matter

9. Claims 10-18 and 20 are allowed.

The following is an examiner's statement of reasons for allowance: none of the prior art of record fairly suggests or shows all of the limitations as claimed. Specifically,

Re claims 10, 15 and 20, none of the prior art of record discloses, in combination with other limitations as claimed, a cut-off film formed under the data line, wherein an edge portion of the cut-off film is overlapped by an edge portion of the data line and the pixel electrode partially overlaps the data line, and an overlap length between the edge portion of the cut-off film and the edge portion of the data line is substantially the same as an overlap length between the pixel electrode and the data line.

The most relevant reference, USPN 5,953,088 to Hanazawa et al. (Hanazawa), fails to disclose or suggest an overlap length between the edge portion of the cut-off film and the edge portion of the data line is substantially the same as an overlap length between the pixel electrode and the data line. As shown in Figs. 11 and 15, Hanazawa discloses a cut-off film 53a(SH) formed under the data line 50a(X), wherein an edge portion of the cut-off film is overlapped by an edge portion of the data line and the pixel electrode 51(PE) partially overlaps the data line 50a(X); however, an overlap length between the edge portion of the cut-off film 53a(SH) and the edge portion of the data line 50a(X) is not the same as an overlap length between the pixel electrode 51(PE) and the data line 50a(X).

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Response to Arguments

10. Applicant's arguments filed July 19, 2005 have been fully considered but they are not persuasive.

Re claims 6, 8, 9 and 19, Applicant argued that Jung and Shimada fail to disclose the claimed invention where "an overlap width between the first data line and the pixel electrode is between 2 micrometer and 4 micrometer ... and an overlap width between the pixel electrode and the second data line is less than 2 micrometer." The Examiner disagrees with Applicant's remarks since Jung discloses that a first overlap width W1 between the first data line and the pixel electrode is larger than a second overlap width W3 between the pixel electrode and the second data line (col. 5, lines 31-40); meanwhile, Shimada discloses that the overlap width of the pixel electrode and the data line is about 1 micrometer or more to perform a display without cross talk (col. 9, lines 58-67). Accordingly, it is obvious that an overlap width W1 between the pixel electrode and the second data line of Jung can be less than 2 micrometer and an overlap width W3 between the first data line and the pixel electrode of Jung can be 2 micrometer or more since W1 is wider than W3 so as to perform a display without crosstalk as taught by Shimada (col. 9, lines 58-64).

Re claims 1-5 and 21, Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection shown above.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (571) 272-2292. The examiner can normally be reached on Monday-Friday from 8:30 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached at (571) 272-2293.

Thoi Duong

10/01/2005

DUNG T. NGUYEN
PRIMARY EXAMINER